



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,678	06/25/2001	Thomas P. Glenn	G0064	9751

7590 10/20/2003
Serge J. Hodgson
Gunnison, McKay & Hodgson, L.L.P.
Suite 220
1900 Garden Road
Monterey, CA 93940

EXAMINER

DINH, TIAN T

ART UNIT	PAPER NUMBER
----------	--------------

2827

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,678

Applicant(s)

GLENN ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-26 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 19-24 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-12, 14-16, 25 and 33-38 is/are rejected.
- 7) ☒ Claim(s) 13 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claims 18, and 27-32 are canceled without prejudice.

New claims 33-38 have been added.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "said drain base surface is below or parallel and coplanar with said pocket base surface, claims 34-35", and "said sealing encapsulant...region, claim 38" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Since applicant has been elected Specie I (figures 1-2) to be presented to exam in this application, claims 34-35, and 38 do not read n Specie I (applicant would elected in paper 4) and also they do not read on Species II-IV. Examiner suggest applicant to be reviewed the claims to fit and read on the figures of the elected Specie.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it

is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 34-35 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification is silent regarding "said drain base surface is below or parallel and coplanar with said pocket base surface, claim 34-35", and "said sealing encapsulant...region, claim 38" Examiner suggest the pocket base surface is lower than the drain base surface.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 37, lines 1-3, it is confuse. The phrase of "said sealing encapsulant comprises an entirely planar exterior surface extending over said runner surface" is not understood. Does applicant means "the planar exterior surface (not entirely planar exterior surface) extending horizontal/vertical over said runner surface." Examiner suggests the extending of the sealing encapsulant on the horizontal direction over the runner surface.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

7. Claims 1-4, 9-12, 14-16, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Pollack (U. S. Patent 6,534,711).

As to claim 1, Pollack discloses a package (100-figure 1) as shown in figures 1-9 comprising:

a substrate (104, column 7, line 7) comprising:

a pocket (114, column 7, lines 31-32);

an overflow reservoir (chamber 112, column 7, line 31) around a periphery of said pocket; and

a mating surface (a top surface of a sidewall 108) around a periphery of said overflow reservoir (112);

a first electronic component (IC 102, column 7, line 6) coupled within said pocket (114);

a sealing encapsulant filling said pocket (column 7, lines 35-37), said sealing encapsulant comprising an exterior surface coplanar with said mating surface; and excess encapsulant within said overflow reservoir (see figures 1-3).

As to claim 2, Pollack discloses the package (100-900) as shown in figures 1-9 further comprising a second electronic component (figure 1A-122, 128) coupled within said pocket.

As to claim 3, Pollack discloses the package (100-900) as shown in figures 1-9 wherein said first electronic component is coupled within said pocket in a configuration selected from the group consisting of a wire-bond configuration, a surface mount configuration and a flip chip configuration.

As to claim 4, Pollack discloses the package (100-900) as shown in figures 1-9 wherein said substrate further comprises: a pocket base surface; and a pocket sidewall surface, said pocket base surface and said pocket sidewall surface defining said pocket (104) (see figures 1B, 2B, 3, 4, 5B, 6B, 7, 8B, 9B, and 9D).

As to claim 9, Pollack discloses the package as shown in figures 1-9 wherein said sealing encapsulant comprises a cured flowable material (plastic material, column 7, lines 50-53, column 8, lines 15-25).

As to claim 10, Pollack discloses the package as shown in figures 1-9 wherein said exterior surface of said sealing encapsulant has a smoothness (see figure 1B having a smooth surface of an encapsulate material filled into a chamber 114) approximate equal to a smoothness of glass (column 7, lines 51-52).

As to claim 11, Pollack discloses the package as shown in figures 1-9 wherein said sealing encapsulant is opaque.

As to claim 12, Pollack discloses the package as show in figures 1-9 wherein said excess encapsulant is formed of a same material as said sealing encapsulant.

As to claims 14-16, Pollack discloses the package as shown in figures 1-9 wherein said substrate (104) further comprises: a pocket base surface and a pocket sidewall surface defining said pocket (114, see all of figures showing a base for contain a component mounted on); a drain base surface (a base of a chamber 112), a drain inner sidewall surface, and a drain outer sidewall surface defining said overflow reservoir (112); and a runner surface (top surface of an inner sidewall 110) extending between said drain inner sidewall surface and said pocket sidewall surface, or extending between said pocket and said overflow reservoir (see figures 1-3), and said mating surface extends from said drain outer sidewall surface (an outer sidewall of 108).

As to claim 33 and best understood to claims 34-35, Pollack discloses said pocket base surface in figure 9B, which is below said drain base surface.

As to claims 25, Pollack discloses the package as shown in figures 1-9 comprising:

a substrate (104) comprising a mating surface (top surface of 108) and a means for (chamber 114) containing an electronic component;

a means for (an encapsulant material, column 7, lines 35-36) protecting said electronic component filling said means for containing, wherein said means for protecting comprises an exterior surface coplanar with said mating surface; and

a means for (the encapsulant material made of plastic or epoxy) preventing said mating surface from being contaminated by said means for protecting.

As to claim 36, and best understood to claims 37-38, Pollack discloses a package (100-figure 1) as shown in figures 1-9 comprising:

a substrate (104, column 7, line 7) comprising:

a pocket (chamber 114, column 7, lines 31-32);

an overflow reservoir (chamber 112, column 7, line 31) around a periphery of said pocket;

a runner surface (a top surface of sidewall 110) extending between said pocket (114) and said overflow reservoir (112); and

a mating surface (a top surface of a sidewall 108) around a periphery of said overflow reservoir (112);

a first electronic component (IC 102, column 7, line 6) coupled within said pocket (114);

a sealing encapsulant filling said pocket (column 7, lines 35-37), said sealing encapsulant extending over said runner surface (note: when the sealing encapsulant filled into the chamber/pocket 114 too full then the encapsulant extends over the runner

surface and fill into the chamber/reservoir 112); said sealing encapsulant comprises an exterior planar surface extending in the horizontal direction over said runner surface; and excess encapsulant within said overflow reservoir (see figures 1-3).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pollack ('711) in view of Wyland et al. (U. S. Patent 6,111,199).

As to claim 5, Pollack discloses all of the limitation of the claimed invention, except for a pin extending through said pocket base surface and through said substrate and protruding from a lower surface of said substrate; and a bond wire electrically coupling said bond pad to said pin.

Wyland teaches a package (100) comprising a substrate (104) having a pin (103) extending through said pocket base surface and through said substrate and protruding from a lower surface of said substrate (104, see figure 2B); and a bond wire (11) electrically coupling said bond pad (105) to said pin.

It would have been obvious to one having ordinary skill in the art at the time the invention was made teaching's Wyland employed in the package of Polack in order to

provide an electrical connection to an external source of a conventional pin grid array package.

Allowable Subject Matter

10. Claims 13, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments filed 08/26/03 have been fully considered but they are not persuasive.

Applicant argues:

Claims 19-20, and 26 have the limitations "an optical component and transparent sealing material" specifically discussed in relation to figures 1-2 (specie I) and in page 9, lines 18-23 regarding figures 1-2 shows "planar central...any electromagnetic radiation passing through sealing encapsulant 140", they are incorrect. Examiner had carefully read through pages 8-10 in a specification, and did not agree the applicant arguments.

In page 8, lines 13-16, page 9, lines 18-23 of the specification, applicant clearly describes that limitations as above which are "in alternative embodiments" that means these limitations as discussed as above which are not in figures 1-2, and further, in page 10, lines 2-11, applicant clearly describes in **figure 3, which is a second specie (specie II)**, an electronic device 110A and a sealing encapsulant material 140A are an

optical element and transparent respectively. Therefore, claims 19-20, and 26 do not read in specie I (figures 1-2), and being withdrawn as non-elected claims.

Pollack fails to teach "said sealing encapsulant comprising an exterior surface coplanar with said mating surface" recited in claims 1 and 25. Examiner disagrees. Pollack shows in figures 1A-1B, the encapsulating material being filled in a chamber (114) having an exterior surface (an outer surface of the encapsulating material, see figure 1B) coplanar with a mating surface of an overflow reservoir (the mating surface which is a top surface of inner and outer sidewalls 110 and 108).

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

Tuan Dinh
October 10, 2003.

John B. Vigushin
John B. Vigushin
Primary Examiner
AU 2827